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Rediscovery of Halesia diptera Ellis (Styracaceae) in Arkansas

Raymond G. Erickson
Soil Conservation Service

FLORISTIC NOTES ON THE ARKANSAS CRUCIFERAE (BRASSICACEAE)

The Cruciferae make up a distinctive group, generally easily recognized by the 4-merous perianth (4 sepals, 4 petals), six tetradynamous stamens (4 long, 2 short) and the 2-carpellate superior pistil that often dehisces so that the septum remains attached to the pedicel. The stamens are sometimes reduced to 4 or 2. The flowers and fruits are commonly arranged in a bractless raceme. The fruits may be short and broad (silicles) or long and narrow (siliques), terete or flattened and with or without a stipe or beak. While the family is generally easily recognized, fruit characters are often required for determination of genera and species. I have worked up a key to the Cruciferae of Arkansas (available for a limited time from the author), including 64 taxa known for the state and 14 taxa reported or suspected for the state, and invite workers in the state and area to use and test the key. In working up the key, I noted the following corrections to the second edition of my *Atlas* (Smith, E.B. 1988. An atlas and annotated list of the vascular plants of Arkansas. Kinko's, 653 West Dickson Street, Fayetteville, Arkansas 72701): (1) The report of *Cardamine flexuosa* With. was based on material of *Sibara virginica* (L.) Rollins, and thus should be deleted from our flora. (2) The varieties of *Descurainia pinnata* (Walt.) Britt., while appearing different in their extremes, intergrade in Arkansas to the extent that their recognition is probably not justifiable.

Additions to the 78 taxa in the key for Arkansas, or suggestions on changes to improve the key would be welcome.

EDWIN B. SMITH, Dept. of Botany and Microbiology, SE-401, University of Arkansas at Fayetteville, Fayetteville, Arkansas 72701.

REDISCOVERY OF *HALESIA DIPTERA* ELLIS (STYRACACEAE) IN ARKANSAS

Halesia diptera Ellis, commonly called Snowdrop-Tree or Two-Wing Silverbell is a large shrub or small tree with showy white flowers appearing in early spring before the leaves appear. It is apparently limited to the Coastal Plain from South Carolina to northern Florida and west to east Texas (Little, USDA Misc. Pub. 1342, 1977). The Silverbell has been known from a single collection in Arkansas (Prescott, September 1887, *G.W. Letterman s.n.*, ILL), presumably made in Nevada County (Tucker, G.E., A guide to the woody flora of Arkansas. Unpub. PhD Dissertation, University of Arkansas, Fayetteville, 356 pp. 1976.). That specimen has been verified by Tucker (Ark. Tech. Univ.). Because the species has not been found in Arkansas for the last century, it was excluded from the Arkansas flora (Smith, E.B., An atlas and annotated list of the vascular plants of Arkansas, 2nd Ed. Privately Published by Kinko Press, Fayetteville, Arkansas, 489 pp. 1988).

In September 1983, I collected this plant in southeastern Lafayette County. After identifying the plant as *Halesia diptera*. I forgot about it until September of 1988 after a conversation with Dr. Tucker. I sent the specimen to him and he agreed with my identification. The plant specimen is on hand at Arkansas Tech. University herbarium and will be sent to the herbarium at the University of Arkansas at Fayetteville.

RAYMOND G. ERICKSON, Soil Conservation Service, Lewisville, AR 71845.

A SYNOPSIS OF THE LACCOPHILINAE (COLEOPTERA: DYTISCIDAE) OF ARKANSAS

Dytiscidae, the predaceous diving beetles, is the largest family of aquatic Coleoptera. More than 400 species are estimated to occur in North America (Michael and Matta, 1977). The subfamily Laccophilinae is represented in all major zoographical regions of the world, but only one of its three genera, the cosmopolitan *Laccophilus,* occurs in Arkansas. This genus has been revised most recently by Zimmerman (1970). The purposes of this paper are to present the first statewide species list, to delineate geographic distributions, and to define preferred habitats for Arkansas laccophiline species, insofar as present knowledge permits. These species may be identified by using Zimmerman's (1970) key to North American species. Field recognition is enhanced by their habit of springing actively about in the net. The information presented has been synthesized primarily from materials housed in the Aquatic Macroinvertebrate Collection of the Arkansas State University Museum of Zoology (ASUMZ). Additional sources include the museum collections at the University of Arkansas-Fayetteville and -Little Rock and published works.

Laccophilus proximus proximus Say was reported as occurring in Arkansas by Zimmerman (1970). This subspecies is our most common form, having been collected in 43 counties and all physiographic provinces (Fig. 1). Young (1954) described it as one of the principal pioneers of newly formed ponds, puddles and other freshwater bodies. Most of the 1,135 specimens examined in this study were collected from lentic systems, including lakes, ponds, swamps, ditches and bogs; however, they were also found in creeks, rivers and springs. Individuals were collected during each month of the year. Guntharp and Harp's (1982) record for *Laccophilus pictus* and that of Harp and Harp (1980) for *L. maculosus* in Crittenden County are actually *L. p. proximus.*

Laccophilus fasciatus rufus Melsheimer was reported from two Arkansas sites by Zimmerman (1970). In this study we report 445 individuals from 157 collections in 40 counties (Fig. 2). Young (1954) found *L. f. rufus* most frequently in muddy or silty-bottomed temporary pools formed in roadside ditches or intermittent streams, all associated with well-drained soils. Zimmerman (1960) collected this subspecies from open, unshaded ponds and roadside ditches in clay soils in the Midwest. We found *L. f. rufus* most commonly in creeks and bayous, but it was also found in ponds, lakes, rivers, temporary pools, ditches, springs and rice fields. The occurrence of *L. f. rufus* in such a variety of habitats, in all physiographic provinces, and in all months except December, suggests that it is broadly tolerant of diverse shallow water ecosystems.

Laccophilus maculosus maculosus Say was first reported for Arkansas by Pippenger and Harp (1985). A total of 120 individuals was examined from 42 collections in 11 counties (Fig. 3). Zimmerman (1970) listed the geographic range as extending north from near a line running from NE Georgia to SW Nebraska. Previously, only single specimens from coastal South Carolina, SE Alabama and Dallas, Texas, were known to exist south of this line. These occurrences were explained by noting that *L. m. maculosus* adults readily fly and can survive for brief periods in almost any aquatic ecosystem (Zimmerman, 1970). All but one of our records are from the Ozark Plateaus, but rather than reflecting water quality requirements, its state distribution is primarily a reflection of northern Arkansas being the southern limit of its range. Most collections of *L. m. maculosus* (63% of specimens) were from lakes and ponds, but some were occasionally found in creeks, rivers and springs. In Arkansas this subspecies has been found during each month except January and December.

Laccophilus undatus Aube is newly reported for Arkansas, and this finding constitutes a major range extension to the SW. A single specimen was collected from a pool of the Saline River downstream of the St Hwy 24 bridge at the Howard-Sevier Co. line on 9 May 1982 (Fig. 3). Zimmerman (1970) reported the range of this species to extend from Bloomington, Indiana, N to Chicago and E to Washington, D.C. and Massachusetts.